



United States
Environmental Protection
Agency

EPA Proposes Cleanup Plan for Landfill Paper Waste

**Allied Paper, Inc./Portage Creek/Kalamazoo River
Willow Boulevard/A-Site**
Kalamazoo, Michigan

July 2005

Share your opinions

EPA invites your comments on its recommended plan for cleaning up contaminated paper waste at the Willow Boulevard/A-Site Landfill. Your input helps EPA determine the best course of action. You may fill out and return the enclosed form, submit comments electronically via the Internet at epa.gov/region5/publiccomment/ or e-mail or fax your comments to:

Shari Kolak

Remedial Project Manager
EPA Region 5 (SR-6J)
77 W. Jackson Blvd.
Chicago, IL 60604
(800) 621-8431 ext. 66151,
weekdays 10 a.m. – 5:30 p.m.
Fax: (312) 353-1155
epa.gov/region5/publiccomment

Your comments must be postmarked by the last day of the comment period:

July 15 – Aug. 15, 2005

You may also share your views by attending a public meeting and hearing. During the meeting, EPA will give a presentation to explain the proposed plan and you will have a chance to speak for the public record during the hearing phase. You may also submit your written comments during the meeting.

*Contact information continues
on the back page.*

U.S. Environmental Protection Agency Region 5 is proposing to oversee the collection and disposal of contaminated paper waste at the Willow Boulevard/A-Site landfills. The proposed cleanup will involve digging up contaminated paper waste that has eroded from the landfills into surrounding areas and placing the material into A-Site. The pollutant of most concern is a chemical compound called polychlorinated biphenyls, commonly called PCBs. PCBs were a common byproduct of recycling carbonless copy paper.

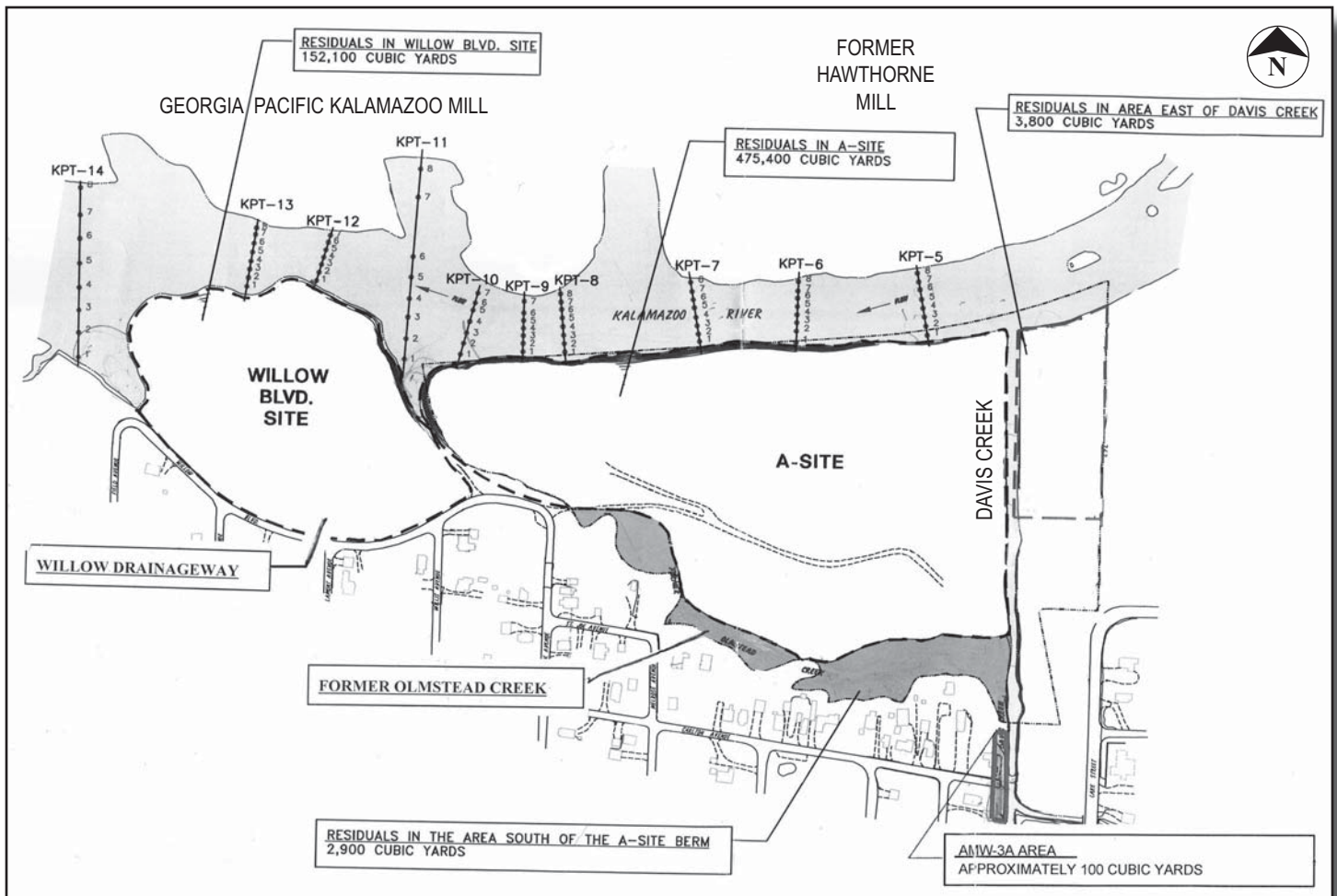
The Willow Boulevard/A-Site is one of four landfills located in the Allied Paper/Portage Creek/Kalamazoo River Superfund site that begins at Morrow Dam and stretches 80 miles downstream to Lake Michigan.

EPA is also currently negotiating an agreement for a separate cleanup action at the former Georgia Pacific and Hawthorne mills. The mills are located north of the Willow Boulevard/A-Site, across the Kalamazoo River (*see map, Page 2*). If an agreement is reached, part of the cleanup will involve digging up PCB-containing paper waste and soil at the mills and then placing this material into A-Site. After all waste is placed into A-Site, a protective cover will be placed on top of the Willow and A-Site landfills, and ground water (underground source of water) will be monitored.

The purpose of this proposed plan fact sheet is to provide basic background information about the landfills, describe the various cleanup options considered, and identify EPA's preferred cleanup alternative.¹ The public is encouraged to comment on this proposal. EPA will be accepting comments from **July 15 to Aug. 15, 2005**. See the adjacent box on how you can provide comments to EPA. You can also attend and participate in a public meeting/hearing at the Kalamazoo Public Library on **Wednesday, Aug. 3**.

The final cleanup plan for the Willow Boulevard/A-Site will be selected by EPA in consultation with its state partner, Michigan Department of Environmental Quality (MDEQ). This will occur only after review and consideration of information provided by the public during the comment period and public hearing. The final cleanup proposal, which will be

¹ Section 117(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA known as the Superfund law) requires EPA provide an opportunity for public input with a meeting and comment period. It also requires a newspaper ad announcing the proposed cleanup plan. This fact sheet summarizes an EPA document called a remedial investigation/feasibility study. The full study and all other official documents can be found at libraries in Kalamazoo, Plainwell, Otsego, Allegan and Douglas.



Willow Boulevard/A-Site Operable Unit

presented in an EPA document called a record of decision or ROD, could differ from this proposed plan depending upon new information or comments EPA receives during the public comment period.

The public is also encouraged to review the supporting documents for the Willow Boulevard/A-Site. The information includes a document called the remedial investigation/focused feasibility study and the site-wide human health and ecological risk assessment reports. The remedial investigation studies the nature and extent of contamination at the site, while the focused feasibility study evaluates different cleanup options. The risk assessment evaluates potential risks to public health and the environment from the contamination at the site. The public can review these reports at the information repositories near the site: the Kalamazoo Public Library or Western Michigan University's Waldo Library, both in Kalamazoo, and libraries in Plainwell, Otsego, Allegan and Douglas. The addresses for each repository can be found in a box on Page 7.

Site description and history

The Willow Boulevard/A-Site is located southeast of the intersection of Business I-94 and Highway M-96 (King Highway) in Kalamazoo Township, Mich. The 32-acre site is bordered by the Kalamazoo River on the north and northwest; Davis Creek on the east; and Willow Boulevard, the former Olmstead Creek and residential areas to the south.

The site consists of two separate disposal areas, Willow Boulevard and A-Site. Willow Boulevard occupies approximately 11 acres, while A-Site occupies approximately 22 acres. The site was used to dispose of paper-making waste. The waste consisted mostly of water, wood fiber and clay. PCBs were introduced into the waste between the 1950s and the 1970s as a result of the recycling of PCB-containing carbonless copy paper at the former Allied Paper King Mill and the Georgia Pacific Kalamazoo Mill. Over time, PCB-contaminated waste eroded from the Willow Boulevard/A-Site and moved nearby to areas outside the landfills. These areas include

a landscape feature called the Willow drainageway, as well as the area south of the A-Site berm (a ledge at the bottom of a bank used to catch material that may roll or flow down the slope) and the land near a monitoring well designated AMW-3A. Sample results indicate that nearby residential properties do not have PCBs above acceptable levels and therefore pose no health risk to residents. Another area east of Davis Creek is also contaminated with PCBs. This area received excess (or “decant”) water from A-Site.

The A-Site was originally a series of drainage (or “dewatering”) lagoons used by the Allied Paper Co.’s King Mill. Waste from the King Mill recycling operations was piped to the lagoons and water was allowed to settle out. The A-Site lagoons were active between 1960 and 1967. Operations at King Mill ended in 1971, and the mill was razed in 1978. Georgia Pacific purchased A-Site in 1975 and used it to dispose of materials dug up from the King Highway drainage lagoons until 1977. The King Highway drainage lagoons were located north of Willow Boulevard/A-Site across the Kalamazoo River on a property owned by Georgia Pacific. From 1977 to 1987, the A-Site received drained paper-making waste from the Georgia Pacific filter presses. The A-Site ceased to be an active disposal area in 1987, when the King Highway Landfill began operations. In late 1998, a wall composed of a material called “sheetpile” was installed along the length of the Kalamazoo River, extending about 150 feet up Davis Creek. This wall was installed 2 feet above the 100-year flood level and was intended to reduce the potential for PCB-containing waste to be eroded from the landfill into the river if the existing dikes should happen to fail.

The Willow Boulevard site was acquired by Georgia Pacific from the Kalamazoo Paper Co. in 1967. The site, which was built without a berm, received PCB-contaminated paper-making waste from the King Highway drainage lagoons from the mid 1960s until disposal operations stopped in 1975. This waste contained clay, paper fibers and PCBs and was placed directly into the river.

In 1999-2000, Georgia Pacific dug up waste from the river next to the Willow Boulevard site at the junction of the former Olmstead Creek and the Kalamazoo River. Georgia Pacific also constructed a berm along a portion of the river edge and placed a temporary 6-inch sand cover over the landfill.

Health risks studied

A study of potential risks to public health and the environment was conducted for the Willow Boulevard/A-Site. Part of the Willow Boulevard/A-Site study used the conclusions from the evaluation done for the entire Kalamazoo River Superfund site. This site-wide evaluation concluded the greatest health risk to people and fish-eating animals comes from eating PCB-contaminated fish from the Kalamazoo River. One way fish can become contaminated is from erosion and movement of PCB-contaminated waste from the landfills and areas near the landfills into the river. The site-wide evaluation also concluded that recreational activities in the Kalamazoo River such as swimming, boating and wading do not pose unacceptable PCB-related health risks to people. The complete results of this site-wide evaluation can be found at the information libraries in documents called *Final (Revised) Human Health Risk Assessment* and the *Final (Revised) Baseline Ecological Risk Assessment*.



This site includes two disposal areas, the Willow Boulevard and A-Site, which are located in Kalamazoo Township. PCB-containing paper waste from the former King Mill and the Georgia Pacific Kalamazoo Mill was disposed of in the landfills.

Based on the data collected and evaluated during the remedial investigation, the Willow Boulevard/A-Site study concluded soil on the surface of the Willow Boulevard site does pose an unacceptable risk to people and wildlife through swallowing or skin contact with PCB-contaminated soil or inhaling PCB-contaminated air. At A-Site, surface soil does not pose an unacceptable risk. However, if deeper soil at Willow Boulevard and A-Site is dug up and brought to the surface, people and wildlife could be exposed to PCBs.

Residential properties south of the landfills do not contain PCBs above acceptable levels and therefore pose no health risk to residents.

The Willow Boulevard/A-Site study also evaluated exposure pathways (ways to come in contact with pollution) for areas near the landfills. These areas include Davis Creek, the former Olmstead Creek, the Willow

Boulevard drainageway, the area east of Davis Creek, the area south of A-Site berm, and the area near monitoring well AMW-3A. For areas near the landfill, the evaluation concluded:

- sediment (mud) in Davis Creek does not pose an unacceptable risk to people and wildlife through swallowing or skin contact with PCB-contaminated soils or inhaling PCB-contaminated air
- sediment in the former Olmstead Creek does pose an unacceptable risk to wildlife but not to people through swallowing or skin contact with PCB-contaminated soils or inhaling PCB-contaminated air
- soil in the Willow Boulevard drainageway does pose an unacceptable risk to wildlife but not to people through swallowing or skin contact with PCB-contaminated soils or inhaling PCB-contaminated air
- sediment in the area east of Davis Creek does pose an

Evaluation criteria

EPA uses nine criteria to evaluate and compare cleanup options. See the table Page 7 comparing the alternatives against these criteria.

- 1. Overall protection of human health and the environment** addresses whether an alternative adequately protects both human health and the environment. This factor can be met by reducing or eliminating contaminants or by reducing people's exposure to them.
- 2. Compliance with applicable or relevant and appropriate requirements (ARARs)** assures that each cleanup alternative complies with federal, state and local laws and regulations.
- 3. Long-term effectiveness and permanence** evaluates how well a cleanup alternative will work in the long term, including how safely remaining contaminants can be managed.
- 4. Reduction of toxicity, mobility or volume through treatment** addresses how well the cleanup alternative reduces the harmful effects, movement and amount of contaminants.
- 5. Short-term effectiveness** compares the time needed to implement a cleanup alternative and the health risks posed to cleanup workers and nearby residents while the alternative is under construction.
- 6. Implementability** assesses how difficult the cleanup alternative will be to construct and operate, and whether technology, materials and services are readily available.
- 7. Cost** compares the expense of each alternative over time in a financial calculation called present worth. Cost includes capital expenditures such as buildings, machines and wells plus operation and maintenance costs. Present worth cost is the total cost of an alternative over time in terms of today's dollar value.
- 8. State acceptance** is whether the state environmental agency, in this case Michigan Department of Environmental Quality, agrees or disagrees with EPA's recommended alternative. EPA evaluates state acceptance after it receives public comments on its preferred option.
- 9. Community acceptance** assesses any issues or concerns the community near the site has with EPA's recommended alternative. EPA considers this factor after it evaluates the public comments.

unacceptable risk to wildlife and to people through swallowing or skin contact with PCB-contaminated soils or inhaling PCB-contaminated air

- soil in the area south of the A-Site berm does pose an unacceptable risk to wildlife but not to people through swallowing or skin contact with PCB-contaminated soils or inhaling PCB-contaminated air
- soil in the area near monitoring well AMW-3A may pose an unacceptable risk to people and wildlife through swallowing or skin contact with PCB-contaminated soils or inhaling PCB-contaminated air, but this area needs further study

Another exposure pathway may exist in which people or wildlife could be exposed to PCBs from the areas near the landfills. During flooding, PCBs from these areas may move or erode into the river. If PCBs end up in river sediment, then the pathway that people or fish-eating animals could be exposed to PCBs is by eating fish. It is unclear whether this pathway actually exists, and it will be studied carefully before the cleanup occurs.

Summary of cleanup options

The goal for the cleanup at Willow Boulevard/A-Site is to prevent the movement of PCBs from the landfills and nearby areas into the Kalamazoo River. PCB movement from the landfills can be reduced by taking several actions including controlling erosion; limiting the movement of PCB-contaminated paper waste and soil from the site through surface water; and reinforcing the barriers that separate the contamination in the landfill from the Kalamazoo River.

EPA considered several ways to clean up PCB-contaminated waste at the Willow Boulevard/A-Site. The Agency evaluated each option against nine criteria required by law. (*See nine criteria explained in the box on Page 4.*) The cleanup options include:

Alternative 1: No further action

EPA uses the no-action alternative as a basis for comparison with other cleanup options. Since no action would be taken, this option would increase the potential for human and ecological contact with the PCB-containing waste and for waste to erode into the river.

Cost: \$0

Alternative 2: Consolidation and containment of select materials

This alternative is not a stand-alone option. It must be paired with one of the bank stabilization measures

described under Alternatives 2A, 2B or 2C.

Alternative 2 involves digging up PCB-contaminated waste from areas next to the landfill and placing the material into A-Site. Approximate volumes that would be dug up under this alternative are as follows: 7,000 cubic yards from the Willow drainageway; 2,900 cubic yards from the area south of the A-Site berm (including former Olmstead Creek); 3,800 cubic yards from the area east of Davis Creek; and 100 cubic yards near monitoring well AMW-3A. At the AMW-3A area, the extent of soil contamination is not fully defined so the volume of material to be dug up may increase. If an agreement between EPA and Georgia Pacific is reached, around 30,000 cubic yards of PCB-contaminated waste at the former Georgia Pacific Mill and 5,000 cubic yards at the former Hawthorne Mill properties will also be dug up and placed into A-Site. After all waste is placed into A-Site, a protective cover will be constructed on top of both the Willow Boulevard and A-Site landfills. Ground-water monitoring will be conducted and the results will be evaluated. If contaminants are present in ground water at concentrations that present a risk to public health or wildlife, then a ground-water cleanup remedy may be required but that remedy will be done under a separate EPA action. Long-term maintenance of the cover and institutional controls (restrictions on how the ground can be used) will also be implemented.

Cost: \$11.5 million to \$13.3 million depending on the type of bank stabilization measures chosen

Alternative 2A: Consolidation and containment of select materials and install new sheetpiling at Willow Boulevard

This option includes all components of Alternative 2 and also includes the installation of new sheetpiling along the perimeter of Willow Boulevard next to the Kalamazoo River. Under this option, 1,800 feet of sheetpile will be installed and extend at least 2 feet above the 100 year flood level. At A-Site, the existing sheetpiling will remain in place and no additional sheetpiling will be installed. **Cost: \$13.3 million.**

Alternative 2B: Consolidation and containment of select materials, remove existing sheetpiling at A-Site, regrade/stabilize banks with a setback along the Willow Boulevard/A-Site

This option includes all components of Alternative 2 and requires the existing sheetpiling at A-Site be removed or cut off below the waterline. The banks at both Willow Boulevard and A-Site will be pulled back to create a

setback or protective buffer along the Kalamazoo River. New dikes will be installed and stabilized using low-profile techniques such as revetment blankets, geoweb materials or articulated concrete systems.

Cost: \$12.7 million

Alternative 2C: Consolidation and containment of select materials, regrade/stabilize banks using ecologically friendly options at Willow Boulevard (*this is EPA's preferred cleanup alternative*)

This option includes all components of Alternative 2. Additionally, waste at Willow Boulevard will be pulled back to create a protective buffer as in Alternative 2B, but a more ecologically friendly dike will be installed. This dike will be constructed using materials such as organic soil and native plants to improve habitat quality. Under this option, the existing sheetpiling at A-Site will remain in place and no new sheetpiling will be installed at Willow Boulevard. **Cost: \$11.5 million**

Alternative 3: Removal and off-site disposal

This alternative involves removing all PCB-contaminated waste from the Willow Boulevard/A-Site and in surrounding areas. Under this alternative, approximately 634,300 cubic yards of material will be removed and disposed of at an off-site landfill. Waste will be drained and stabilized using fly ash prior to disposal. Adding fly ash will increase the material handling volume to 762,200 cubic yards. All excavated areas will be backfilled, graded, and restored to match the surrounding land.

Cost: \$46.1 million

Alternative 4: Removal of residuals from Willow Boulevard and consolidation at A-Site

This alternative involves removing all PCB-contaminated materials from Willow Boulevard and placing the materials into A-Site. Contaminated areas near the landfills will also be dug up and placed into A-Site. The existing sheetpiling at the A-Site will remain in place. After waste is placed into A-Site, a protective cover will then be installed. All areas excavated under this option will be backfilled with clean soil and planted with vegetation. This alternative includes long-term maintenance, ground-water monitoring and institutional controls. **Cost: \$13.3 million**

How do the options compare?

EPA evaluated the cleanup options against seven of the nine criteria. The state and community acceptance criteria will be evaluated after public comments are received by EPA. The degree to which the cleanup

options meet the evaluation criteria and how they compare to other cleanup options are discussed below and illustrated in a chart on Page 7.

Alternative 1 would not protect public health or the environment. Under this option no cleanup will occur. The potential for human and wildlife contact with PCBs would increase because waste would remain in place at the landfill and surrounding areas. This option would also result in the increased potential of PCBs to move through erosion, surface water runoff or by ground water from the landfills into the Kalamazoo River.

Alternatives 2A, 2B, 2C, 3, and 4 would protect public health and the environment. The potential for human and wildlife contact would be reduced or eliminated because PCB-contaminated waste would be contained under a protective cover or removed from the site. All of these alternatives would be effective in reducing erosion and movement of PCBs into the river.

Under Alternative 2A, sheetpiling would be an effective barrier between the waste and the river but would result in permanent habitat loss along riverbanks. This alternative would also cost more than Alternatives 2B and 2C.

Alternative 2B would provide a more esthetically pleasing riverbank but would require more extensive waste handling activities than Alternatives 2A and 2C. This option would also cost more than Alternative 2C.

Alternative 2C, which is EPA's current preference, would use more ecologically friendly measures to improve habitat quality while controlling costs. This alternative also costs less than Alternatives 2A and 2B and would result in less waste handling than under Alternatives 2B, 3, and 4.

Alternative 3 would provide the most long-term protection. This alternative may, however, increase the potential for PCB exposure to workers and possibly to the local community if PCBs become airborne during digging or accidentally released during transportation off-site. Controls would be put in place to reduce these risks, but these risks cannot be eliminated completely. Alternative 3 would also cost significantly more than Alternatives 2A, 2B, 2C, and Alternative 4.

Alternative 4 would also increase the potential for PCB exposure to workers and possibly the local community but to a lesser extent than Alternative 3.

EPA's preferred cleanup alternative

Based on the analysis completed to date, EPA believes the best cleanup option at the Willow Boulevard/A-Site and surrounding areas is Alternative 2C. Alternative 2C includes the consolidation and containment of PCB-containing waste, creating a protective buffer zone from the river at Willow Boulevard, and using ecologically friendly ways to restore the riverbanks and improve habitat quality. Long-term maintenance and ground-water monitoring will be conducted. Institutional controls (such as a perimeter fence and land-use covenants) would also be implemented to restrict public access to the site.

Read site-related documents

Kalamazoo Public Library

315 South Rose
Kalamazoo

Waldo Library

Western Michigan University
1903 West Michigan Avenue
Kalamazoo

Charles Ransom Library

180 South Sherwood
Plainwell

Allegan Public Library

331 Hubbard Street
Allegan

Otsego District Library

219 South Farmer Street
Otsego

Saugatuck-Douglas Library

10 Mixer Street
Douglas

When possible, Site information is also posted to:
epa.gov/region5/sites

Evaluation Criteria for Willow Boulevard/A-Site	Cleanup Options					
	1	2A	2B	2C	3	4
1. Overall Protection of Human Health and the Environment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2. Compliance with ARARs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3. Long-Term Effectiveness and Permanence	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4. Reduction of Toxicity, Mobility, or Volume Through Treatment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Short-Term Effectiveness	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6. Implementability	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7. Cost	\$0	\$13.3 million	\$12.7 million	\$11.6 million	\$46.1 million	\$15.8 million
8. State Acceptance	Will be evaluated after the public comment period					
9. Community Acceptance	Will be evaluated after the public comment period					



Fully meets criteria



Partly meets criteria



Does not meet criteria



United States
Environmental Protection
Agency

Region 5
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77 W. Jackson Blvd.
Chicago, IL 60604

FIRST CLASS

**ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
WILLOW BOULEVARD/A-SITE:
EPA Proposes Cleanup Plan for Landfill Paper Waste**

This fact sheet is printed on paper made of recycled fibers.

Contact information continued from Page 1

Wednesday, August 3, 2005

6 – 7 p.m. - EPA presentation

7 – 8:45 p.m. - public hearing

**(Times are approximate; the hearing may end earlier
if all comments have been heard from those present.)**

**Kalamazoo Public Library
Van Dreesen Room, Third Floor
315 S. Rose St.
Kalamazoo**

If you need special accommodations for the public meeting and hearing contact Don de Blasio at the contact information above.

For more information

For scientific and technical questions about the landfill cleanup you may contact EPA Remedial Project Manager **Shari Kolak** at (312) 886-6151 or e-mail kolak.shari@epa.gov

When possible, site information is also posted on the Internet at epa.gov/region5/sites

Comment Sheet _____

U.S. Environmental Protection Agency is interested in your comments on the proposed cleanup plan for Willow Boulevard/A-Site Landfill. EPA will consider public comments before selecting a final cleanup remedy for the Allied Paper, Inc./Portage Creek/Kalamazoo River Willow Boulevard/A-Site. Please use the space below to write your comments, then fold and mail this form. Comments must be postmarked by the last day of the comment period. If you have general questions, contact Don de Blasio at (312) 886-4360, or through EPA's toll-free number at (800) 621-8431. Those with electronic capabilities may submit their comments to EPA via the Internet at: epa.gov/region5/publiccomment.

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Name _____

Address _____

City _____ State _____

Zip _____

Fold on Dashed Lines, Tape, Stamp, and Mail

Name _____

Address _____

City _____ State _____

ZIP _____

Place
Stamp
Here

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